

The Fabulous  
**Lighting Maven**  
*Unexpectedly Illuminating*

ACTION-ORIENTED PEARLS OF WISDOM FOR INDUSTRIAL MANAGERS AND CONTRACTORS  
[www.uspowervision.com](http://www.uspowervision.com) • 1963 Park Avenue • Twin Lake, Michigan 49457 • [RMotsch@USPowerVision.com](mailto:RMotsch@USPowerVision.com)

Dear Reader:

One of the most important indicators of an LED lighting fixture's energy efficiency is its Power Factor rating. While the meaning of this metric eludes some Facilities Managers, it's really very simple as to what it means, and how it's calculated.

**POWER FACTOR**

Power factor is the measure of how much electricity is actually being converted to work – the creation of electric light. Looked at conversely, the electricity that is not being converted to lumen output, or footcandles down on the task area, is wasted consumption. For those particular electrons, you're paying for kWh that is buying you nothing, so this portion of the electricity consumption is just flying out the door.

Every electrical device, machine, etc. loses some of its useful input energy to waste ... the question is always, then, 'how much'. As power factor metric is typically expressed in terms of a percentage, a good power factor rating for an LED lighting fixture would be in the neighborhood of 90%, which is to say that the fixture loses no more than 10% of its input energy, converting what remains to light.

More technically, power factor is the ratio of useful power in kilowatts, or kW, divided by what we're charged for in kVA (kilovolt-amps). So it tells us how much useful power we're getting for the power we consume.

There are at least two additional negative impacts to low power factor, beyond the obvious inefficient energy usage. Heat damage to insulation and other circuit components can become a real problem. And conductor and equipment may need to be sized upward as well, to ensure that enough useful energy gets to the unit, for it to do its work.

There is a wonderful YouTube video available that explains this in very simple terms, and you can find it here: [Power Factor Explained](#). It's produced by a gentleman by the name of Paul Evans, who founded his website known as TheEngineeringMindset.com in 2015, with the mission to help students, engineers and like-minded people learn technical engineering topics through short, simplified tutorials. A narrative on Paul and what he's attempting to accomplish is here: [About The Engineering Mindset](#).

We are an [industrial lighting contractor](#), and not an engineering firm. As such, we've found that Paul's ability to break topics down into useful, understandable bites on a whole host of topics has been invaluable.

The prudent Facilities Manager, intent on continuously learning his/her craft, might take a look.



U.S. Power is an industrial energy services company that specializes in the reduction of energy consumption across a broad array of manufacturing and food processing facilities located in Michigan, Ohio, Indiana, Illinois and Wisconsin. In addition, the company publishes a useful curation of lighting-oriented information from the marketplace, and consolidates it into this concise, twice per month letter known as The Fabulous Lighting Maven, distributed to Facilities Managers throughout the nation.

While the company prides itself in its diversity, it owns and operates a niche lighting contracting firm as well, known as U.S. Power Vision, LLC. With a core business in and around industrial LED lighting, it keeps itself and its clients at the cutting edge of illuminating technologies, all aimed at providing – from the eyes to the fingertips – exceptional illumination, superb control and intuitive simplicity.

**YOUR MORNING GRIN**

Wanna walk a mile  
for our LED lighting?  
Nah. Kick back. We'll bring it to you.

See there? It's all about you ..

**Ron Motsch**  
**(616) 570-9319**

*Building and Managing a Suite of  
The Most Productive and Admired  
LED Lighting Systems on Earth*

**CLICK HERE FOR MORE DRAMA**